
Evaluation of the Use of Rural Health Clinics: Attitudes and Behaviors of Primary Care Physicians in Service Areas of Nurse Practitioner Clinics

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THE MAJOR OBJECTIVE of the nurse practitioner (NP) role has been to increase the productivity of all levels of medical manpower by assigning functions to the least skilled and lowest paid health professional capable of performing the particular task. It is generally acknowledged that all of the functions currently performed by the physician do not require the high level of skills which the physician possesses (1). Many of these functions may be effectively delegated to nurse practitioners, thus allowing the physician more time to perform more complicated functions requiring advanced skills.

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Whether nurse practitioners have been able to practice successfully in a given geographic area or professional realm has generally depended on questions concerning productivity, quality of care, and patient and physician acceptance. Most of the early research regarding nurse practitioners examined questions concerning productivity and quality of care. Results of these studies indicate that NPs can assume roles that increase physician productivity without any dilution of service quality (2,3)

Several other studies have examined patients' acceptance of nurse practitioners. These have indicated that the general population appears to be very willing to allow a trained NP or physician assistant to care for them or their families (4,5).

Patients who have received health services from nurse practitioners have reported high levels of satisfaction (6). This finding concerning high levels of satisfaction with nurse practitioner services is corroborated by results detailed in the first paper in our two-part report "Evaluation of the Use of Rural

Health Clinics: Knowledge, Attitudes and Behaviors of Consumers" (7). Among the seven satisfaction measures investigated, users of services at nurse practitioner clinics were as satisfied or significantly more satisfied than their counterparts who received primary care services from a local physician.

Attitudes and behaviors of other providers in the vicinity of a rural health clinic are important to its success, because these providers may influence the patients who may or may not become clinic users. These factors are especially true of satellite NP clinics. Since the nurse practitioner must sometimes refer patients to local primary care physicians, the NP must have a good working relationship not only with the clinic backup physician, but also with other primary care physicians in the area. Furthermore, patients who use such a clinic must believe that the NP and the physician of their choice work closely in the same health care system. The objectives of this study, therefore, were to (a) identify attitudes and behaviors of other medical providers which may be related to clinic use and (b)

based on findings from objective *a*, to recommend policies and actions aimed at increasing clinic use.

Methodology

Description of study clinics. Four rural health clinics were examined in this evaluation. They were selected to represent different geographic areas within the State of Mississippi as well as different utilization rates. All four clinics had been providing services for at least 9 months when the data collection began. Three clinics were funded through the Rural Health Initiative (RHI) program and the fourth clinic was a freestanding National Health Service Corps site.

To protect the confidentiality of the clinics and the other medical providers who participated, the clinics are designated as A, B, C, and D. These designations were assigned to the clinics according to their average daily utilization rates (table 1); clinic A had the highest rate and clinic D had the lowest.

Data collection. The attitudes and behaviors of the primary care providers who practice in the clinic

service areas were ascertained via a brief questionnaire. These providers were identified by the project directors of the four clinics.

Items in the questionnaire pertained to the following topics:

1. attitudes and knowledge concerning nurse practitioners,
2. attitudes toward and awareness of the RHI clinic,
3. experience with the clinic,
4. opinions concerning good and bad attributes of the clinic, and
5. attitudes toward working cooperatively with the clinic.

The directors provided names and addresses of 41 local primary care physicians who practiced in the clinics' service areas. The questionnaire, along with a cover letter explaining the purpose of the survey, was mailed to each physician. The physician was requested to complete the questionnaire and return it in a postage-paid reply envelope. A second letter and questionnaire were mailed to all physicians who did not respond to the first mailing within 1 month. After both mailings 25 physicians (61.0 percent) responded.

Results

Table 2 depicts physicians' previous experience and knowledge concerning nurse practitioners. Among respondents, 9 (36.0 percent) indicated they had worked with a nurse practitioner; 6 had worked with NPs in their own practice, and the same number indicated that it had been in another setting. Three physicians reported that they currently employed an NP.

Asked whether they had ever heard or read anything about nurse practitioners, 21 reported "yes." Most frequent sources of information included the lay press, television or radio (52.4 percent); non-subscription professional journals (47.6 percent); presentations at professional meetings (42.9 percent); professional subscription journals (38.1 percent); and a professional colleague who has not worked with a nurse practitioner. Most physicians reported more than one source of information.

Finally, the physicians were asked if they would be interested in learning more about nurse practitioners. Almost three-quarters of the physicians responded "no." However, a

substantial portion (36.0 percent) had worked with nurse practitioners at the time of the survey or in the past. Anecdotal information indicated that others were not interested because they were strongly against the nurse practitioner concept or because they felt they already knew enough about NPs to satisfy their needs.

Table 3 summarizes data concerning physicians' attitudes toward the nurse practitioner concept, specifically whether they would hire an NP in their own practices. Of the 24 physicians responding, 5 indicated a desire to employ a nurse practitioner; an additional 10 approved of the concept but did not want to employ one. Eight physicians indicated they did not approve of the nurse practitioner concept, and one reported he did not know enough about the concept to decide. These results were similar to an earlier statewide survey of 475 Mississippi physicians conducted in 1979 by the Research Institute of Pharmaceutical Sciences, University of Mississippi (8); responses in the present study did not differ significantly ($X^2 = 2.01$, $df = 3$) from the statewide survey response.

Among physicians who approved of the concept, reasons for not wanting to hire a nurse practitioner included do not need one in my practice (66.7 percent), prohibitive costs (16.7 percent), and difficult for a nurse practitioner to join an old established practice (16.7 percent). Physicians who did not approve of the nurse practitioner concept cited three reasons: nurses practicing medicine (66.7 percent), nurse practitioner is not qualified to provide primary care (16.7 percent), and no quality assurance (16.7 percent), as shown in table 3.

Table 4 summarizes physicians' reports regarding interaction with the rural health clinic (and its

Table 1. Characteristics of four rural health clinics

Characteristic	Clinic A	Clinic B	Clinic C	Clinic D
Population of community (1970 census data)	450	275	1,125	600
Estimated target population (data supplied by clinic)	(¹)	5,329	2,041	5,106
Estimated target population calculated by Research Institute of Pharmaceutical Sciences	7,857	5,478	4,017	3,637
Average daily utilization rate	16.3	8.9	3.9	2.9

¹ Clinic did not have the information.

nurse practitioner) in the area. Among physician-respondents, 52 percent reported that someone from the clinic had visited or talked with them about the clinic. More than three-fourths of the physicians indicated that they had never visited the clinic, although 60 percent of this group indicated they would like to do so at a convenient time.

Referral and consulting patterns are also presented in table 4. Among the 25 physicians who responded, 12 physicians had patients referred to them by the clinic, and 7 of these physicians were satisfied with the information that they had received on each patient.

Among the 25 physicians who responded, 12 indicated that they had received one or more calls from the nurse practitioner clinic to consult about one of the physician's patients. The physicians were satisfied with the outcome of the consultation in each instance that was reported.

Thus, table 4 sums up several important statistics concerning nurse practitioner clinic—local physician interaction. Only about half of the physicians reported that they had ever been contacted by a clinic staff member. Only about a quarter of the physicians had actually visited the clinic, although 60 per-

Table 2. Physicians' previous experience with and knowledge of nurse practitioners

Question	Yes		No	
	Number	Percent	Number	Percent
Have you ever worked with a nurse practitioner?	9	36.0	16	64.0
If yes—				
Was this in another practice setting?	6	66.7	...	...
Was this your own practice?	6	66.7	...	...
Do you currently employ a nurse practitioner in your practice setting?	3	33.3	...	...
Have you ever read or heard anything about nurse practitioners?	21	87.5	3	12.5
Source, if yes—				
Lay press, TV, or radio?	11	52.4	...	...
Nonsubscription professional journals?	10	47.6	...	...
Professional subscription journals?	8	38.1	...	...
Professional colleague who has worked with a nurse practitioner?	9	42.9	...	...
Professional colleague who has not worked with a nurse practitioner?	7	33.3	...	...
Some other source?	3	14.3	...	...
Presentation at a professional meeting?	9	42.9	...	...
Would you be interested in learning more about nurse practitioners?	6	26.1	17	73.9

Table 3. Physicians' responses to "Which statement best describes your desire to employ a nurse practitioner in your own practice?"

Response	Number	Percent
Yes, I would like to hire a nurse practitioner	5	20.8
No, while I approve of the concept, I would not like to employ one in my practice because	10	41.7
Do not need one in my practice	4	66.7
Prohibitive costs	1	16.7
Difficult for a nurse practitioner to join an old established practice	1	16.7
No response	4	...
No, I do not approve of the concept of nurse practitioner because ..	8	33.3
Nurses practicing medicine	4	66.7
Nurse practitioner is not qualified to provide primary care	1	16.7
No quality assurance	1	16.7
No response	2	...
I do not know enough about the nurse practitioner concept to decide	1	4.2
No response	1	...

Table 4. Physicians' interactions with the local rural health clinic

Question	Yes		No	
	Number	Percent	Number	Percent
Has anyone at _____ clinic ever visited or talked with you about this clinic?	13	52.0	12	48.0
Have you ever visited _____ clinic?	6	24.0	19	76.0
If no: Would you like to if it were convenient? ¹ ..	6	40.0	9	60.0
Has a patient ever been referred to you from _____ clinic?	12	48.0	13	52.0
If yes: Were you satisfied with the information on the patient's condition that you received? ¹	7	77.8	2	22.2
Has the nurse practitioner at _____ clinic ever called you to consult about one of your patients?	8	32.0	17	68.0
If yes: Were you satisfied with the outcome of the consultation? ¹	6	100.00	0	0.0

¹ Total does not equal number of "Yes" or "No" respondents because of missing values.

Table 5. Physicians' attitudes toward patients using the local rural health clinic

Question	Yes		No	
	Number ¹	Percent	Number ¹	Percent
Have you ever encouraged a patient to use _____ clinic for routine care or followup? ..	7	28.0	18	72.0
If you had a patient who lived near _____ clinic, would you ever advise them to:				
Obtain followup care at the clinic after an acute illness episode?	8	36.4	14	63.6
Obtain followup care at the clinic for a stable chronic illness?	12	54.5	10	45.5
Obtain general care at the clinic and have clinic personnel consult with you or refer them to your office when necessary?	11	45.8	13	54.2

¹ Totals vary due to missing values.

cent of those who had not made such a visit indicated an interest in doing so. Referrals and consultations were somewhat low, but physicians reported that they were satisfied with the outcomes when the referrals and consultations did occur.

Table 5 depicts physicians' attitudes toward patients who used the local rural health clinic. Eighteen physicians indicated they had never encouraged a patient to use the local clinic for routine or followup care. When asked whether they would ever advise a patient who lived near the clinic to obtain clinic services, 8 reported they would recommend obtaining followup care for an acute illness episode, 12 would recommend followup care for a stable chronic illness, and 11 would recommend general care with consultation or referral to the physician when necessary.

Table 6 presents physicians' responses to questions which deal with perceived advantages and disadvantages of the local nurse practitioner clinic. Most frequently cited advantages were close to home, availability (46.2 percent); good source of primary care with referral when necessary (19.2 percent); none (19.2 percent); and blood pressure checks and followup care (11.5 percent).

Most frequently cited disadvantages included physician provides better care, personnel are not qualified or properly trained (18.5 percent); none (18.5 percent); physician is not present at the clinic enough, nurse practitioner uses own judgment too much (11.1 percent); and high fees, waste of tax dollars (11.1 percent). Overall, physicians saw a moderate need in the community for the local rural health clinic (table 7).

The physicians were asked what the local clinic staff could do to work more closely with them to

care for area residents (table 6). Suggestions in descending frequency of response were consult with other physicians in the area, do nothing, refer patients to their regular physician, hold regular meetings with area physicians, inform other providers of services offered, and provide more laboratory services. Overall, physicians responded that they were somewhat willing to work with the local rural health clinic when asked to rate their willingness on a 4-point scale (table 8).

Discussion

Physicians who practiced in the vicinity of the four rural health clinics studied generally approved of the nurse practitioner concept and expressed a willingness to work more closely with the clinics. However, a majority of these physicians reported that they had little, if any, contact with their local clinic. More importantly, previous contact with the local clinic was significantly related to the physicians' positive attitudes toward patients using the rural health clinic in the area.

This link between experience or knowledge and approval was verified in the earlier statewide study (8). Physicians in this 1979 survey who reported a "great deal" of previous experience responded with an approval rate of 86.1 percent, while physicians who reported no direct experience had an overall approval rate of only 62.9 percent. Similarly, 79.0 percent of physicians who reported knowing another physician who employed a nurse practitioner approved of the concept; only 62.5 percent of the remaining physicians approved.

The physicians who responded to the survey offered several specific comments regarding the clinics' advantages and disadvantages as well as methods to improve working relationships with the local clinic. The following specific rec-

Table 6. Physicians' comments about the local rural health clinic

Question	Number	Percent
What do you see as the main advantage, if any, to the public in having a rural health clinic such as _____ clinic?		
Close to home, availability	12	46.2
Good source of primary care with referral when necessary	5	19.2
Blood pressure checks and followup care	3	11.5
Emergency care until physician arrives	1	3.8
None	5	19.2
No response	2	...
What do you see as the main disadvantage, if any, to the public in having a rural health clinic such as _____ clinic?		
Physician provides better care, personnel are not qualified or properly trained	5	18.5
Physician is not present enough, nurse practitioner uses own judgment too much	3	11.1
High fees, waste of tax dollars	3	11.1
Nurse practitioner refers patients only to backup physician	2	7.4
Nurse practitioner prescribes too much	2	7.4
Public thinks nurse practitioner is a physician	2	7.4
Clinic not needed because physicians are available nearby	2	7.4
Pharmacy services are not available	1	3.7
Limited hours of coverage	1	3.7
Discourages physicians from locating in community	1	3.7
None	5	18.5
No response	3	...
What could the medical and administrative personnel at _____ clinic do to work more closely with you in providing care to the residents of the area?		
Consult with other physicians in the area	5	27.8
Refer patients to their regular physician	4	22.2
Hold regular meetings with physicians in the area	1	5.6
Provide more laboratory services	1	5.6
Inform other providers of services offered	1	5.6
Provide public health services	1	5.6
Nothing	5	27.8
No response	8	...

ommendations stem from their comments.

Provide information to the physicians in the area by (a) attending hospital medical staff meetings to discuss the role of the nurse practitioner and the clinic's services, (b) holding regular meetings with

area physicians, and (c) having clinic open houses for other medical providers. Develop linkages by initiating personal contact with providers in the area through individual protocols for consulting with the patient's usual physician and referring when necessary and by

Table 7. Physicians' ratings of need in the community for the local rural health clinic

Clinic	Sample size	Need rating (percent)					Mean
		Very strong need	Strong need	Moderate need	Little need	No need at all	
A	7	14.3	28.6	14.3	42.9	0	2.86
B	7	14.3	14.3	14.3	42.9	14.3	3.29
C	5	20.0	0	0	60.0	20.0	3.60
D	6	0	33.3	33.3	33.3	0	3.00
Overall	25	12.0	20.0	16.0	44.0	8.0	3.16

Table 8. Physicians' willingness to work with the local rural health clinic

Clinic	Sample size	Willingness rating (percent)				Mean
		Very willing	Somewhat willing	Slightly willing	Not at all willing	
A	7	42.9	14.3	28.6	14.3	2.14
B	7	42.9	28.6	0	28.6	2.14
C	5	40.0	0	0	60.0	2.80
D	6	50.0	16.7	33.3	0	1.83
Overall	25	44.0	16.0	16.0	24.0	2.20

consulting with area physicians regarding the development of services.

In summary, a more assertive role by nurse practitioners and clinic administrators in establishing working relationships with local primary care physicians should result in improved clinic use. This more assertive role should also foster a more integrated system of primary care delivery in rural communities.

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SYNOPSIS

SHARPE, THOMAS R. (Research Institute of Pharmaceutical Sciences, University of Mississippi), and BANAHAN, BENJAMIN F., III: *Evaluation of the use of rural health clinics: attitudes and behaviors of primary care physicians in service areas of nurse practitioner clinics. Public Health Reports, Vol. 97, November-December 1982, pp. 566-571.*

In response to concerns of the directors of Rural Health Initiative projects in Mississippi, a study was conducted to examine factors related to use of rural health clinics. This report focuses on attitudes and behaviors of primary care physicians in the service areas of four clinics staffed by nurse practitioners. Data for this evaluation were obtained via mail questionnaires sent to 41 pri-

mary care physicians in the service areas of the clinics. Usable responses were received from 25 (61.0 percent) of the physicians.

The data indicate that a majority of these physicians approve of the nurse practitioner concept. Although there is evidence to support a positive correlation between previous experience and knowledge concerning nurse practitioners and physician acceptance of the nurse practitioner concept, only about half of the physicians reported that anyone had ever contacted them to talk about the clinic. Only about a quarter of the physicians had ever visited the rural health clinic, but 60 percent indicated that they would like to do so.

These findings indicate a need to

develop closer working relationships with all primary care physicians in the service area of a rural health clinic. The data indicate that when such a closer relationship existed, physicians were satisfied with the outcome of interactions. Twelve (48 percent) physicians stated that they had patient(s) referred to them by the clinic. Among these physicians 77.8 percent were satisfied with the information that they had received on the patient's condition. Fewer physicians (8 or 32.0 percent) reported that they had received a call from the nurse practitioner clinic to consult about one of the physician's patients. The physicians were satisfied with the outcome of the consultation in each instance that was reported.